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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/728,850
Filing Date: December 08, 2003
Appellant(s): LEE ET AL.

Lee, Hyung-Bok
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/04/07 appealing from the Office action mailed 6/01/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 – 11, 13 – 17, 19 and 20 are rejected under 35 U.S.C. 102(e), in the alternative as being anticipated by Nortoft (U.S. 6,773,848).

Regarding claim 1, Nortoft discloses wherein a pouch-type secondary battery unit, comprising:

a first secondary battery cell comprising a first secondary battery body and a first case (figure 1b, item 1; col. 3 lines 65 – col. 4 lines 4), the first secondary battery body being disposed inside the first case, the first secondary battery cell further comprising a first positive electrode terminal and a first negative electrode terminal perforating out from said first case (figure 1, items 2 and 3);

a second secondary battery cell comprising a second secondary battery body and a second case (figure 1b, item 1'; col. 3 lines 65 – col. 4 lines 4), the second secondary battery body being disposed within the second case, the second

secondary battery cell further comprising a second positive electrode terminal and a second negative electrode terminal perforating out from said second case (figure 1, items 2' and 3');

and a safety circuit board disposed in an external void within said battery unit (figure 2a, item 5), said external void being defined as being in between the first and second secondary battery cells, the safety circuit being electrically connected to the first and second positive electrode terminals and to the first and second negative electrode terminals (figure 2b).

Regarding claim 2, Nortoft discloses wherein the first and second cases each comprise: a case body having a space for accommodating one of the first and the second battery bodies (column 3 lines 65 – column 4 lines 5); and case cover coupled to the case body to seal the battery body contained within the case body (column 3 lines 65 – column 4 lines 5).

Regarding claim 3, Nortoft discloses wherein each case body comprises a flanged portion (figures 1b – 2b) wherein the outer case shows flanged portions), the positive and negative electrode terminals perforating the respective case at the flanged portion of the case body (figures 1b and 2b).

Regarding claim 4, Nortoft discloses wherein the first battery cell and the second battery cell are positioned so that the first positive electrode terminal is disposed near the second positive electrode terminal and the first negative terminal is disposed near the second negative electrode terminal (figure 1a items 2, 2', 3, and 3').

Regarding claims 5 and 9, Nortoft discloses wherein each of the battery bodies being helically wound positive and negative (figure 4e).

Regarding claim 6, Nortoft discloses wherein a pouch type secondary battery unit comprising:

a case comprising a body having a plurality of spaces, each one of said plurality of spaces being spaced apart from each other by a predetermined distance (figure 3a; col. 3 lines 65 – col. 4 line 5), said case further comprising a case cover extending from a side of the case body and coupled with the case body to seal all the plurality of spaces (column 3 lines 65 – column 4 lines 5) wherein the case cover is folded such that the spaces are stacked on top of each other (figure 2b);

a plurality of battery cells (figure 4e and 5d), each battery cell having a battery body and two electrode terminals (figure 2b item 3' and 2'), each battery body being disposed in a respective ones of said plurality of spaces (figure 3a), each of said battery bodies having positive and negative electrode terminals extending outward through the case (figure 3b items 6 and 6'); and

a safety circuit board disposed in an external void (figure 6b item 5; column 8 lines 15 – 20), the safety circuit board, being connected to each of said positive electrode terminals and the negative electrode terminals of each of said plurality of battery cells (column 8 lines 7 – 20).

Regarding claim 7, Nortoft discloses wherein the case body comprises a flanged portion, the positive and negative electrode terminals extending through

the flanged portion (figure 1b shows wherein the battery case is flanged and terminals 2, 2', 3, and 3' are extend out of the flanged portion).

Regarding claim 8, Nortoft discloses wherein the positive electrode terminals of different battery cells in the battery unit are all aligned with each other and the negative electrode terminals of the different battery cells in the battery unit are all aligned with each other (figure 5d).

Regarding claim 10, Nortoft discloses wherein a case comprising a case body and a cover, the case body being attached to the cover said case body comprising a plurality of spaces (figures 1b and 3a; column 3 lines 65 – column 4 lines 5);

a plurality of battery bodies, each one being disposed in corresponding ones of said plurality of spaces, each of said battery bodies having two electrode terminals perforating said case body (figure 3a; figure 5d);

a safety device electrically connected to said terminals of said battery bodies said case body having a flanged portion that mates with said cover (figure 4e item 11), said safety device being disposed in between two separated sections of said flanged portion when said case is folded onto itself so that each of said plurality of battery bodies are stacked on top of each other (figure 4e item 5 (safety circuit board) and batteries are stacked).

Regarding claim 11, Nortoft discloses in figure 4e wherein said cover of said case being folded onto itself so that each of said plurality of battery bodies are stacked on top of each other.

Regarding claim 13 and 14, Nortoft discloses wherein each of said plurality of battery bodies being comprised of electrode plates stacked on top of each other and not being wound (figure 4e and 5d).

Regarding claim 15, 16, and 19, Nortoft discloses wherein each of said plurality of battery bodies being electrically connected to each other in seriatim and parallel (column 1 lines 1 – 7).

Regarding claim 17, Nortoft discloses wherein a plurality of secondary battery cells, each battery cell comprising a battery body disposed in a sealed case (column 3 lines 65 – column 4 lines 5), each battery cell further comprising a pair of electrode terminals of opposite electrical polarity electrically connected to said battery body and perforating said case (figure 2b items 2, 2', 3, and 3'); and

a safety circuit board being electrically connected to the terminals of each said plurality of battery cells, said safety device being disposed in such a way as to not add to the size of the unit (figure 4e item 5), each of said plurality of secondary battery cells being stacked on top of each other (figure 4e), each of said cases having a flanged portion protruding outward from the battery body, (figure 2b items 2, 2', 3, and 3'), wherein a void is formed between the flanged portions of adjacent stacked battery cells (figure 4e item 11), said void being external to said sealed case, said safety device being disposed within said void (figure 4e item 5).

Regarding claim 20, Nortoft discloses wherein said safety circuit board being one of or both of a positive temperature coefficient device and a safety vent (column 5 lines 57 – 65)

(10) Response to Argument

Claim 1

The appellant argues that the Nortoft reference discloses a circuit board 5 disposed between first and second secondary battery cells, however Nortoft fails to disclose:

A. *an external void within said battery unit, said external void being defined as being in between the first and second secondary battery cells;* and

B. *a safety circuit board disposed in an external void within said battery unit.*

Nortoft discloses in figure 1b wherein there is a first secondary battery cell, item 1 and a secondary battery cell, item 1'. The space in between the two individual cells is an external void. The void is external to both first and second battery cells and in between the two cells. Nortoft discloses in figure 2b wherein the safety circuit board, item 5, lies in within the external void of the first and second battery cells. The appellant argues that the circuit board is "sandwiched" in between the first and second cells. Anything that fits in between the two cells is within an external void, as the safety circuit board is placed externally between the two cells. The fact that the safety circuit board is placed in between or "sandwiched" between the two battery cells means that there is an external void in between the two cells. The appellant also argues that there is no external void within the battery unit of the Nortoft within which the safety circuit is disposed.

Nortoft discloses in figure 1b wherein the space in between the two cells, items 1 and 1' is a void that is external to both of the cell. As shown in figure 2b, the circuit board is placed within the external void between the two cells. The appellant discloses the invention's figure 3B wherein item 49 is the external void. Nortfoft's figure 2 b shows wherein parts of the safety circuit board are located in a void like that of the claimed invention, more specifically directly the are that number 5 is points to.

Claim 2

The appellant argues that the Nortoft reference does not disclose *a case body having a space for accommodating one of the first and second battery bodies;* with the *case cover coupled to the case body to seal the battery body contained within the case body.* Nortoft discloses in column 3 lines 65 – column 4 line1 wherein the cells are "housed in flexible packages." These "flexible packages" are cases with a cover. Nortoft discloses in figure 6A wherein item 14, the flaps are a part of "flexible package" which is a case body with a space in between for accommodating the cells. The top part of item 14 covers the cells and seals them in. Nortoft further discloses in column 8 lines 21 - 54 wherein batteries are housed in flexible packages (case), wherein the flaps, item 14 are the covers of the case. The appellant argues wherein the flaps overlap the end portions of the circuit board but do not cover the cells. Nortoft discloses in column 8 lines 21 – 23 wherein the cell is housed within a flexible package. The flaps

correspond to appellants claimed cover because the flaps cover the electrochemical cell provides housing for them.

Claim 3

The appellant argues that the Nortoft reference does not disclose *a flanged portion, the positive and negative electrode terminals perforating the respective case at the flanged portion of the case body.* Nortoft discloses in figure 2b wherein electrodes, item 3' and 2' perforate from the flanged portions shown on the sides of the cells, item 1. The appellant argues that no element resembling a "flange" is found: a protruding rim, edge, rib, or collar, used to strengthen an object, hold it in place or attach it to another object. The flanged portion is also shown in figure 1b wherein the electrodes protrude from the edge, holds the electrodes in place and allows the cell to be attached to another cell.

Claim 5

The appellant argues that there is no discloses that that the electrochemical cells are helically wound positive and negative electrode plates. Please note the appellant's definition of "helically wound" is to be folded in an accordion-like manner. Figures 4e and 5d disclose wherein the cells are helically wound positive and negative electrode plates. Figure 4e and 5d also disclose the positive and negative plates with the symbols "+" and "-".

Claim 6

The appellant argues that the Nortoft reference does not disclose *a case body having a plurality of spaces, each one of said plurality of spaces being*

spaced apart from each other by a predetermined distance, said case further comprising a case cover extending from a side of the case body and coupled with the case body to seal all the plurality of spaces, wherein the case cover is folded such that the spaces are stacked on top of each other. Nortoft further discloses in column 8 lines 21 - 54 wherein batteries are housed in flexible packages (case), wherein the flaps, item 14 are the covers of the case. Nortoft discloses in figures 6a - d wherein the cases may be folded and stacked on top of on another.

The appellant argues wherein the Nortoft reference does not disclose a safety circuit board disposed in an external void defined by folding the case of the cover. Nortoft discloses in figure 1b wherein there is a first secondary battery cell, item 1 and a secondary battery cell, item 1'. The space in between the two individual cells is an external void. The void is external to both first and second battery cells and in between the two cells. Nortoft discloses in figure 2b wherein the safety circuit board, item 5, lies in within the external void of the first and second battery cells. The appellant argues that the circuit board is "sandwiched" in between the first and second cells. Anything that fits in between the two cells is within an external void, as the safety circuit board is placed externally between the two cells. The fact that the safety circuit board is placed in between or "sandwiched" between the two battery cells means that there is an external void in between the two cells. The appellant also argues that there is no external void within the battery unit of the Nortoft within which

the safety circuit is disposed. Nortoft discloses in figure 1b wherein the space in between the two cells, items 1 and 1' is a void that is external to both of the cell. As shown in figure 2b, the circuit board is placed within the external void between the two cells. The appellant discloses the invention's figure 3B wherein item 49 is the external void. Nortfoft's figure 2 b shows wherein parts of the safety circuit board are located in a void like that of the claimed invention, more specifically directly the are that number 5 is points to. Additionally, Nortoft discloses in figure 6b wherein the safety circuit board, item 5 is disposed within the external void of the battery when the cells are folded and stacked on top of one another.

Claim 10

The appellant argues that Nortoft does not disclose *a case comprising a case body and a cover, the case body being attached to the cover, said case body comprising a plurality of spaces.* Nortoft discloses in column 3 lines 65 – column 4 line1 wherein the cells are "housed in flexible packages." These "flexible packages" are cases with a cover. Nortoft discloses in figure 6A wherein item 14, the flaps are a part of "flexible package" which is a case body with a space in between for accommodating the cells. The top part of item 14 covers the cells and seals them in. Nortoft further discloses in column 8 lines 21 - 54 wherein batteries are housed in flexible packages (case), wherein the flaps, item 14 are the covers of the case. The appellant argues wherein the flaps overlap the end portions of the circuit board but do not cover the cells. Nortoft discloses in column 8 lines

21 – 23 wherein the cell is housed within a flexible package. The flaps correspond to appellants claimed cover because the flaps cover the electrochemical cell provides housing for them.

The appellant argues that the Nortoft reference does not disclose *a flanged portion, the positive and negative electrode terminals perforating the respective case at the flanged portion of the case body.* Nortoft discloses in figure 2b wherein electrodes, item 3' and 2' perforate from the flanged portions shown on the sides of the cells, item 1. The appellant argues that no element resembling a "flange" is found: a protruding rim, edge, rib, or collar, used to strengthen an object, hold it in place or attach it to another object. The flanged portion is also shown in figure 1b wherein the electrodes protrude from the edge, holds the electrodes in place and allows the cell to be attached to another cell.

Claim 17

The appellant argues that the Nortoft reference does not disclose *wherein a void is formed between the flanged portions of adjacent stacked battery cells, said void being external to said sealed case said safety device being disposed within said void.* Nortoft discloses in figure 2b wherein electrodes, item 3' and 2' perforate from the flanged portions shown on the sides of the cells, item 1. Nortoft discloses in figure 1b wherein the space in between the two cells, items 1 and 1' is a void that is external to both of the cell. As shown in figure 2b, the circuit board is placed within the external void between the two cells between the flanged portions.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Alexis Boateng

Conferees:

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